line's utility is, among other things, its usefulness as a screen for at least one primary type of compound for inclusion in anti-cancer drugs having efficacy dependent upon the ability to facilitate cell differentiation. Rather than merely being an experimental use to attain more information on the invented cell line itself, differentiation induction concomitant with actin reorganization is considered one means of screening for compounds suitable for inclusion in anti-cancer drugs for treatments, especially compounds designed to be cytostatic.

Another utility of the invention disclosed herein includes its usefulness for enhancing cell adhesion and reducing cell mobility, for inclusion in drugs having efficacy dependent upon the ability to decrease metastasis.

(2) Under 35 U.S.C. § 112 ¶ 1

Claims 1 - 13 are also rejected under 35 U.S.C. 112, ¶ 1; according to the Office Action, one skilled in the art would not know how to use the claimed invention. Applicant respectfully submits that the written description allows one skilled in the art to, without undue experimentation, use the cells as a screen for at least one primary type of compound for inclusion in anti-cancer drugs having efficacy dependent upon the ability to facilitate cell differentiation. One skilled in the art, and in the technology underlying his or her own proposed differentiation compound, will be enabled to make and use the invention to gauge the ability of said compound to induce reorganization of actin filaments into stress fibers, and facilitate cell differentiation in cells having characteristics comparable to the disclosed cell line.

Alternatively, one skilled in the art (and in the technology underlying his or her own proposed cell anti-metastasis compound), will be enabled to make and use the invention to gauge the ability of said compound to enhance cell adhesion or reduce cell mobility, for inclusion in drugs having efficacy dependent upon the ability to decrease metastasis.

Claims 7 and 9 are rejected under 35 U.S.C. 112, ¶ 1; according to the Office Action, the written description fails to describe the claimed subject matter in such a way as to enable one skilled in the art to make or use the invention. The specification fails to provide an enabling disclosure because it fails to indicate that the claimed materials are deposited or otherwise available to the public. Applicant respectfully reiterates that specimens of the invented cells "will be deposited in the American Type Culture Collection or other acceptable depository upon notification that such deposit is essential to the patentability of the invention". (Application, page 49 lines 18 to 20.) The Examiner has graciously agreed to hold this rejection in abeyance. Applicant represents that said deposit will occur promptly upon indication that the same is the final remaining obstacle to patenting.

(3) **Under 35 U.S.C. 112, ¶ 2**

Claims 10 and 12 are rejected under 35 U.S.C. 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention, because each claim lacks antecedent basis for a claim feature. The new claims include all necessary antecedent basis.

(4) **Under 35 U.S.C. 102(b)**

Claims 1,2,3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter et al (Anticancer Research, 1997, Vol. 17, pp. 1973 - 1984). Although Applicant respectfully disagrees with said rejection, none of the new claims is anticipated by said reference.

Claims 1 - 6, 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Gal et al (Gynecologic Oncology, 1982, Vol. 13, pp. 50 - 57) or Rubin et al (Gynecological Oncology, 1992, Vol. 45, pp. 273 - 278) or Grenman et al (Cancer Research, 1988, Vol. 48, pp. 1864 - 1873). However, none of said references discloses the limitations expressed in new claim 21,

namely, a hyperdiploid cellular composition comprising cells isolated from a poorly differentiated human endometrial adenocarcinoma that is metastatic, said cells having characteristics consistent with primary tumor.

Claims 1 - 4, 6, 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto (J Tokyo Med Coll, 1988, Vol. 46, pp. 925 - 936). However, said reference does not disclose the limitations expressed in new claim 21, namely, a hyperdiploid cellular composition comprising cells isolated from a poorly differentiated human endometrial adenocarcinoma that is metastatic, said cells having characteristics consistent with primary tumor.

Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated under Carter et al (Anticancer Research, 1997, Vol. 17, pp. 1973 - 1984). Although Applicant respectfully disagrees with said rejection, none of the new claims is anticipated by said reference.

(5) **Under 35 U.S.C. 102(b)**

Claims 1 - 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Carter et al (Experimental and Molecular Pathology, 2000, Vol. 69, pp. 175 - 191). Attachment 2 hereto is the Declaration of Charleata A. Carter Ph.D. (under 37 C.F.R. 1.132) establishing that the co-author of said reference was not a co-inventor of any invention disclosed in the Application. Said co-author worked under the direction of Applicant, and had no part in the conception or reduction to practice of any invention disclosed in the Application.

(6) **Under 35 U.S.C. 103**

Claims 11 - 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al (Experimental Cell Research, 1992, Vol. 201, pp. 262 - 272) and Carter et al (Anticancer Research, 1997, Vol.17, pp. 1973 - 1984) and Albright et al (Pathobiology, 1997, Vol. 65, pp. 177 - 183) and Varma et al (In Vitro, 1982, Vol. 18, pp. 911 - 918) and Freshney et al (The Culture of Animal

Cells, 1994, pp. 142 - 146). Although Applicant respectfully disagrees with said rejections, none of the new claims is obvious in view of said references.

Claims 11 - 14 are rejected under Carter et al (Experimental Cell Research, 1992, Vol. 201, pp. 262 - 272) and Carter et al (Anticancer Research, 1997, Vol.17, pp. 1973 - 1984) and Albright et al (Pathobiology, 1997, Vol. 65, pp. 177 - 183) and Varma et al (In Vitro, 1982, Vol. 18, pp. 911 - 918) and Freshney et al (The Culture of Animal Cells, 1994, pp. 142 - 146) as applied to claims 11 - 13, and further in view of Kischer et al (Cytotechnology, 1989, Vol. 2, pp. 181 - 186) and Latimer (U.S. Patent No. 6,074,874) and Kniss et al (American Journal of Obstetrics and Gynecology, 1997, Vol. 177, pp. 559 - 567). Although Applicant respectfully disagrees with said rejections, none of the new claims is obvious in view of said references.

III. CONCLUSION

Based upon the foregoing evidence, contentions and understanding with the Examiner, Applicant Charleata A. Carter, Ph.D. believes that new claims 21 through 39 are in condition for allowance. Applicant accordingly respectfully requests the Examiner to withdraw all objections and rejections, and pass this application to allowance as a utility patent.

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ATTACHMENT 1

CLEAN VERSION OF ENTIRE SET OF NEW CLAIMS

21. (New) A hyperdiploid cellular composition comprising cells isolated from a poorly differentiated human endometrial adenocarcinoma that is metastatic, said cells having characteristics consistent with primary tumor.

22. (New) A cellular composition as described in claim 21 hereinabove, wherein a plurality of said cells have at least 48 chromosomes.

23. (New) A cellular composition as described in claim 22 hereinabove, wherein a plurality of said cells are at least triploid at chromosome 3.

24. (New) A cellular composition as described in claim 22 hereinabove, wherein a plurality of said cells are at least triploid at chromosome 17.

25. (New) A cellular composition as described in claim 21 hereinabove, wherein a plurality of said cells have at least the following karyotypic characteristics: 48, XX, ?t (1:20) (p?34.3; p11.2), dup (2) (q11.1q23), +3, del (5) (q?23q?31), ?add(6) (p23), add (7) (p?21), +add (7) (q22), der(9;14) (q10;q10), add (15) (p11), +der (17) t(17,;19) (p11.1;p11.1), I (19) (q10), ?del (20) (p?11.2).

26. (New) A line of cells originating from a specimen of poorly differentiated human

endometrial adenocarcinoma that is metastatic, said cells having characteristics consistent with primary tumor, wherein a plurality of said cells responds to an anti-cancer compound in substantially equivalent ways at the cellular level as said specimen.

27. (New) A line of cells as described in claim 26 hereinabove, wherein said anti-cancer compound comprises a differentiating agent.

28. (New) A line of cells as described in claim 27 hereinabove, wherein said differentiating agent
comprises a retinoic acid treatment.

29. (New) A cellular composition as described in claim 26 hereinabove, wherein said cells are grown *in vitro* as a monolayer.

30. (New) A cellular composition as described in claim 26 hereinabove, wherein said original specimen is superficially invasive.

31. (New) A method of identifying a compound that inhibits the activity of a protein kinase in a cell, comprising the steps of:

(a) providing a cell of claim 21 hereinabove,

(b) contacting said cell with at least one inhibitor test compound, and

(c) determining whether a protein kinase primarily localizes away from the cell

membrane, said localization being an indication that said test compound likely inhibits said protein kinase.

32. (New) A method described in claim 31 hereinabove, wherein:

(a) said protein kinase is an isoform known to be involved in hindering the organization of cytoskeletal matrix in the cell cytoplasm, and

(b) determining whether said isoform localizes primarily away from the cell membrane, said localization being an indication that said cell is apt to undergo organization of cytoskeletal matrix in the cell cytoplasm.

33. (New) A method described in claim 32 hereinabove, wherein:

(a) said protein kinase is PKC-α and said inhibitor test compound is a retinoic acid treatment, and

(b) determining whether PKC-α localizes primarily in a cytoplasmic and perinuclear region, said localization being an indication that said cell is apt to undergo organization of cytoskeletal matrix in the cell cytoplasm.

34. (New) A method of determining the effect of a protein kinase inhibitor on a condition in a

cell having manifestations consistent with cancer, comprising the steps of:

(a) providing a cell of claim 21 hereinabove.

(b) contacting said cell with at least one inhibitor of protein kinase known to be present

in abnormally high levels in cells failing to undergo organization of cytoskeletal matrix in the cell cytoplasm, and

(c) determining whether protein kinase primarily localizes away from the cell membrane, said localization being an indication that said cell is apt to undergo organization of actin filaments into stress fibers in the cell cytoplasm.

35. (New) A method described in claim 34 hereinabove, wherein:

(a) said protein kinase is PKC-α and said inhibitor of protein kinase is a retinoic acid treatment, and

(b) determining whether PKC-α localizes primarily in a cytoplasmic and perinuclear region, said localization being an indication that said cell is apt to undergo differentiation.

36. (New) A method described in claim 35 hereinabove, wherein said organization of actin filaments into stress fibers in the cell cytoplasm indicates cell differentiation.

37. (New) A method described in claim 35 hereinabove, wherein said differentiation comprises cell enlargement.

38. (New) A method, using a cell isolated *in vitro,* for predicting the effect on cell differentiation

attributable to a differentiation enhancing test compound to be applied to an *in vivo* cancer cell,

comprising the steps of:

(a) providing a cell of claim 21 hereinabove,

(b) contacting said cell with at least one enhancer test compound, and

(c) determining whether actin filaments organize into stress fibers cytoskeletal matrix.

39. (New) A method as described in claim 38 hereinabove, wherein said enhancer test compound is a retinoic acid treatment.